

What is claimed is:

1. A method of testing a bit error rate for each of N optical communication channels in a wavelength division multiplexed optical communication system having N optical transmitters communicating to N optical receivers via N communication channels, the method comprising:

cascading said N optical communication channels such that an output of an optical receiver i for an optical communication channel i is connected to an input of an optical transmitter $i+1$ for an optical communication channel $i+1$, for all values of i from one to N ;

supplying a bit error rate test signal from a bit error rate tester to an input for a first optical transmitter for a first optical communication channel;

supplying the bit error rate test signal from an output of optical receiver N to the bit error rate tester;

detecting errors in the bit error rate test signal received by the bit error rate tester and calculating therefrom a measured bit error rate;

comparing the measured bit error rate with a predetermined system bit error rate threshold;

indicating that the bit error rate for each of the N optical communication channels is less than a specified bit error rate value when the measured bit error rate is less than or equal to the predetermined system bit error rate threshold; and

monitoring a signal quality for the bit error rate test signal at each of the N optical transmitters and N optical receivers when the measured bit error rate is greater than the predetermined system bit error rate threshold to thereby determine which of the N optical communication channels has greater/less than a specified bit error rate value.

2. The method of claim 1, wherein said predetermined system bit error rate is equal to the specified bit error rate for each of N optical communication channels.

3. The method of claim 1, wherein said monitoring is independent of the bit error
5 rate test signal.

4. The method of claim 3, wherein said monitoring includes monitoring a bit interleave parity for each electrical signal in the N optical communication channels.

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